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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/582,259

02/21/2007

Bertrand Leroux

Serie 6439

1319

40582

7590

10/01/2008

AIR LIQUIDE

Intellectual Property

2700 POST OAK BOULEVARD, SUITE 1800

HOUSTON, TX 77056

EXAMINER

NDUBIZU, CHUKA CLEMENT

ART UNIT

PAPER NUMBER

3749

MAIL DATE

DELIVERY MODE

10/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/582,259	Applicant(s) LEROUX ET AL.	
	Examiner CHUKA C. NDUBIZU	Art Unit 3749	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on through 2/21/2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 June 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>060906</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "5" has been used to designate both left first orifice and the right first orifice. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawing seem to be freehand. Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities: Page 8 line 3 recites "orifices 5 and 6" instead of "orifices 3 and 4".

Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 16 to 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dugue et al 6,910,879 in view of Khinkis 4,761,132. Dugue teaches the invention as claimed (fig 1-6), a separate-injection burner assembly consisting of at least two blocks and comprising a combustible gas injection orifice and at least four oxygenated- gas injection orifices, in which: a) the first block 35 has a fuel injection orifice 29 and at least two oxygenated-gas injection orifices, the first oxygenated-gas injection orifice 28 being placed so as to be in contact with the fuel injection orifice, the second oxygenated- gas injection orifice 27 being placed at a distance d1 from the fuel injection orifice; and b) the second block 34 has at least third 26, 306 and fourth 206 (fig 6) oxygenated-gas

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injection orifices, each placed at a distance d_2 from the fuel injection orifice of the first block, d_2 being greater than d_1 ; wherein the first oxygenated-gas injection orifice is placed centrally in the fuel injection orifice (see figs 1 and 2); wherein d_1 is between 5 and 20 cm (column 8 line 62); wherein the oxygenated gas is preheated (column 4 lines 31-32); wherein d_2 is greater than 30 cm, since d_1 is less than 30 cm and $d_1 < d_2$ (column 3 lines 5-7); wherein the quantity of oxygen injected by the jets of oxygen-rich oxygenated gas represents 10-50% of the total quantity of oxygen injected (column 3 lines 21-24)

With regard to claims 17 and 18 Khinkis discloses a combustion system wherein greater than 30% oxygen by volume is oxygen-rich and by implication less than 30% oxygen is oxygen-lean (column 3 lines 46-48).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Dugue's invention by defining oxygen-rich to be greater than 30% oxygen by volume in order to make available sufficient oxygen for complete combustion of the fuel.

With regard to claim 25 the fourth orifice having an area between 4 and 100 times that of the third orifice is a matter of design choice. Applicant failed to disclose any criticality for this limitation. Schwedersky 3,729,285 discloses injection orifices wherein orifice 42 is larger than orifice 32 (see fig 2).

With regard to claims 24, the oxygen being derived from liquid oxygen storage unit is a design choice. Applicant failed to disclose the significance of where the oxygen

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is derived from. Where the oxygen came from would not make any difference in the functioning of the invention.

With regard to claims 29 and 30 the method being used for glass charge or for a reheat furnace or being used when the continuous production of oxygen is interrupted are deemed matters of intended use which is of no significance to the structure or method of using the burner assembly. *In re Otto*, 312 F.2d 937, 938 136 UPSQ 458, 459 (CCPA 1963). MPEP 2111.02 II.

With regard to claims 27 and 28 the burner assembly wherein it includes a third block having a fifth oxygenated-gas injection orifice placed at a distance d_2 from the fuel injection orifice and having an area of between 4 and 100 times the area of the third injection orifice and wherein it comprises two first blocks, two second blocks and one third block are deemed matters of duplication of parts that would not produce new and unexpected results. . *In re Otto*, 312 F.2d 937, 938 136 UPSQ 458, 459 (CCPA 1963). MPEP 2111.02 II.

With regard to method claims 16-24, through the normal use and operation of Dugue in view of Khinkis's invention discussed above the limitation of method of use recited in claims 16-24 will inherently be met.

Conclusion

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The prior art made of record in the attached USPTO 892 and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CHUKA C. NDUBIZU whose telephone number is (571)272-6531. The examiner can normally be reached on Monday - Friday 8.30 - 4.30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve McAllister can be reached on 571-272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Chuka C Ndubizu/
Examiner, Art Unit 3749

20080926

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749

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